



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/305,121	05/04/1999	SARATH D. GUNAPALA	06816/065002	1634

20985 7590 04/05/2002

FISH & RICHARDSON, PC  
4350 LA JOLLA VILLAGE DRIVE  
SUITE 500  
SAN DIEGO, CA 92122

EXAMINER

BAUMEISTER, BRADLEY W


ART UNIT	PAPER NUMBER
----------	--------------

2815

DATE MAILED: 04/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

NP

<b>Office Action Summary</b>	Application No. <b>09/305,121</b>	Applicant(s) <b>Gunapala et al.</b>	
	Examiner <b>B. William Baumeister</b>	Art Unit <b>2815</b>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Mar 11, 2002
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 4, 9, 11-16, and 36-39 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claims 1, 3, 4, 9, 11-16, and 36-39 are subject to restriction and/or election requirement

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- |  |  |
|--|--|
| 15) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 20) <input type="checkbox"/> Other:  |

Art Unit: 2815

## DETAILED ACTION

### *Election/Restriction*

1. A thorough review of the file-wrapper history indicates that some errors or internal inconsistencies may exist in the previously issued restrictions of papers #3 and #6. Accordingly, the previous restrictions are hereby withdrawn and superseded by the following restriction. Further, in order to ensure that Applicants are provided an opportunity to present claims directed to all of the subject matter to which they may be entitled, this restriction is being sent out prior to an action on the merits.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1, 3, 4, 11-16, 36, 38 and 39 drawn to a dual-band QWIP, classified in class 257, subclass 21.

Species IA. A dual-band QWIP element composed of a double stack wherein a first superlattice stack detects a first wavelength and a second barrier-well superlattice stack formed on the first stack detects a second wavelength and wherein none of the stacks of the double stack are shorted, to which claims 1, 3, 4, 11-16, 36, 38 and 39 are directed.<sup>1</sup>

---

<sup>1</sup>Independent claim 1 is currently directed towards the species of invention IA. Various claims depending therefrom (i.e., claims 11-13) further set forth limitations directed towards the continuum transport (conduction) band having a smooth energy profile between the wells of the

Art Unit: 2815

Species IB. A dual-band QWIP element composed of a double stack wherein a first superlattice stack detects a first wavelength and a second barrier-well superlattice stack formed on the first stack detects a second wavelength and wherein alternate QWIPs are shorted to make them inoperative.

Species IC: A dual-band QWIP array wherein each photodetector element is composed of a single superlattice having interlaced wells of differing depths which are formed to detect different, respective wavelengths.

II. Claims 9 and 37, drawn to QWIP in combination with a MUX, provisionally classified in class 250, subclass 338.4.

3. The inventions are distinct, each from the other because of the following reasons:

a. Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the \_\_\_\_\_  
two quantum well structures. The examiner notes that the specification discusses this feature in relation to the embodiment of species IC (see e.g. specification pages 47 - 48 and FIG. 17A), but the Examiner did not see this feature disclosed in the specification in relation to the embodiments of inventions IA or IB. For the sake of compact prosecution, Applicant is invited to take this opportunity to point out to the examiner where the specification disclosed this feature in relation to the IA species, cancel/amend the claims, or otherwise clarify this issue.

Art Unit: 2815

subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the MUX may be employed regardless of the specifics of various features such as the composition of the barriers and wells or the type of grating that is employed. The subcombination has separate utility such as a photodetector which is not read out by a multiplexer.

b. Because these inventions are distinct for the reasons given above, the inventions have acquired a separate status in the art because of their recognized divergent subject matter as shown by their different classification, the search required for Group II is not required for Group I, and separate examination would be required, restriction for examination purposes as indicated is proper.

c. This application also contains claims directed to the three patentably distinct species IA, IB and IC of the claimed invention I as set forth above.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Art Unit: 2815

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. A telephone call was made to Mr. Bing Ai on 4/4/2002 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Art Unit: 2815

**INFORMATION ON HOW TO CONTACT THE USPTO**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, **B. William Baumeister**, at (703) 306-9165. The examiner can normally be reached Monday through Friday, 8:30 a.m. to 5:00 p.m. If the Examiner is not available, the Examiner's supervisor, Mr. Eddie Lee, can be reached at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'B. William Baumeister', with a stylized flourish at the end.

B. William Baumeister

Patent Examiner, Art Unit 2815

April 4, 2002